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10/549,574	09/19/2005	Hiroyuki Kurimura	278485US0PCT	9527

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ALEXANDRIA, VA 22314

EXAMINER
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MULLIS, JEFFREY C

ART UNIT	PAPER NUMBER
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1796

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ELECTRONIC

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/549,574  
Filing Date: September 19, 2005  
Appellant(s): KURIMURA ET AL.

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Jacob A. Doughty  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 1-29-09 appealing from the Office action mailed 9-4-08.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: It is not clear why Appellants recite "C. Obviousness-Type Double Patenting" under "GROUND OF REJECTION TO BE REVIEWED ON APPEAL". Appellants admit that the obviousness type double patenting rejection is not addressed and request that this grounds of rejection be held in abeyance. Hence the obviousness type double patenting rejection is not under appeal. Furthermore the rejection under 35 USC 103

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based upon Moczygemba et al. '569 is hereby withdrawn and Moczygemba '569 is therefore no longer relied upon.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,393,838

Moczygemba et al.

2-1995

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moczygemba (US 5,393,838).

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Patentees disclose a polymodal block copolymer produced by use of 3 consecutive charges of styrene or styrene/butadiene mixture such as would produce 3 polymer blocks comprising vinyl aromatic monomer and containing some butadiene. Note Table VI in column 12 where a value of  $M1/M2$  of 15 can be calculated for the vinyl aromatic blocks produced through step 5 based on the assumption that the species resulting from the step 1 charge of butyl lithium incorporates all 35 phm of the first charge and half (15 phm) of the step 2 and step 3 charges (given that half of the active alkyl lithium present during steps 2 and 3 is from the step 1 charge of alkyl lithium) and assuming top molecular weight of an aromatic block is proportional to the amount of monomer incorporated and inversely proportional to the amount of alkyl lithium from which the block is formed. While the material is coupled with VIKOFLEX 7170 which is an epoxidized soybean oil which has roughly 4 epoxy groups, coupling of lithium terminated styrenic block copolymers is notoriously inefficient and even a tiny amount of material in which only 2 chains are coupled read on the instant claims despite the limitation "linear". Furthermore soybean oil is a mixture of unsaturated materials and it appears likely that some diunsaturated material is present in soybean oil prior to epoxidation. With re to applicants polydispersities, polydispersities resulting from a single charge of alkyl lithium and a single charge of monomer are understood by those skilled in the art to be generally fairly narrow and applicants lower value of polydispersity of 3.35 is roughly double of what those skilled in the art would expect from a single charge of styrene and butyl lithium. However given the multiple additions of alkyl lithium and monomer, those skilled in the art would assume substantial

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broadening of molecular weight distribution for the above proposed charge sequence such than molecular weight distribution would lie within the metes and bounds of the claims.

When the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention, basis exists for shifting the burden of proof to applicant. Note In re Fitzgerald et al. 619 F. 2d 67, 70, 205 USPQ 594, 596, (CCPA 1980). See MPEP § 2112-2112.02.

#### **(10) Response to Argument**

Regarding Moczygemba et al. '838, Appellants argue that the claims require a composition containing a linear block copolymer "given by the formula S-B-S" in which "B is a polymer block consisting of conjugated diene monomer units" and that the "formula of claim 1 does not provide for coupling agents". Firstly, Moczygemba at column 13, line 61 disclose block copolymers which are identical to those of Moczygembas' Table 6 in column 12 except in that pure charges (which give rise to pure homopolymeric blocks) are added instead of mixed charges. Note the presence of numerous charges in the sequence "S, B, S" such as would result in the "S-B-S" block sequence required of the block copolymer of the claims. Furthermore the "S-B-S" sequence is present in the block copolymer of Runs 2A-2D before as well as after coupling and it is therefore immaterial whether or nor coupling agent is excluded by the claims since the block copolymers of Runs 2A-2D as they exist prior to the coupling

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step reasonably appear to be encompassed by those of the instant claims. In any case the footnote to Table VII in column 13 indicates that the coupling efficiency is only 70% and therefore uncoupled polymer exists even after coupling agent is added. While it is immaterial whether or not the remaining examples contain a block copolymer in which the block sequence "S-B-S" is present in that only a single example meeting all of the limitations of the claims is needed to anticipate the claims, the sequence B/S-B-x-B-S/B such as is present in all of patentees' examples (except for those of Table XII, which like those of Runs 2A-2D contain only homopolymeric blocks) is equivalent to the block sequence "S-B-S" required by the claims in that the polymer block "S" of the claims is recited to be a block "comprising" vinyl aromatic monomer and therefore does not exclude butadiene (and therefore the "S" block of the instant claims encompasses "S/B"). Similarly the block copolymer of instant claim 1 itself is referred to as "comprising" and does not exclude coupling agents or additional "B" blocks.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Jeffrey C. Mullis/

Primary Examiner, Art Unit 1796

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JCM

4-30-09

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